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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,746	04/01/2004	George D. Blankenship	201990.01887	5093

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EXAMINER	
ELVE, MARIA ALEXANDRA	

ART UNIT	PAPER NUMBER
3742	

NOTIFICATION DATE	DELIVERY MODE
06/24/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/813,746	BLANKENSHIP, GEORGE D.	
	Examiner	Art Unit	
	M. Alexandra Elve	3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-38,40-133 and 144* is/are pending in the application.

4a) Of the above claim(s) *47-133* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *2-38,40-46 and 144* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 July 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3, 7-8, 13, 15, 19, 22, 24-25 & 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiou et al. (USPN 6,700,093) in view of Neff et al. (USPAP 2004/0045806) and Penfold et al. (USPN 4,031,424).

Chiou et al. discloses a dielectric discharge apparatus for the removal of perfluorocompound. The apparatus has a housing, a first and second dielectric tube and at least one electrode disposed in the housing. A cooling gas passages are formed around the first dielectric tube and the housing and another around the second dielectric tube. Some gases, which may be used, are carbon dioxide, nitrous oxide and so forth. The dielectric tubes are ceramic (e.g. aluminum oxide) or quartz. Dielectric tubes are sealed within the housing.

The use of an applied voltage is disclosed, however, the specific values are not taught. Additionally, Chiou et al. does not teach the use of a wire or gap dimensions.

Chiou et al. does not teach the use of a light or ultra-violet.

Neff et al. discloses electric discharge cleaning and the use of ultra-violet in the cleaning of strip materials. Moist air is used in the discharge region. UV radiation occurs in such a manner that both sides of the strip material are treated.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the ultra-violet as taught by Neff et al. in the Chiou et al. dielectric discharge apparatus because it ensures through cleaning of the part.

Penfold et al. discloses a discharge apparatus for cleaning and/or coating a wire. The apparatus creates stable and uniform plasmas. A power supply is used to form plasma. Plasma is formed near a cylindrical cathode sheath and gases used are argon, neon and so forth. These plasmas are used for cleaning. The apparatus has a combined high voltage and field power supply. An annular chamber exists within a barrel. Insulators may be constructed of glass, Pyrex, ceramic, quartz and other suitable materials. Plastic tubing may also be used in the apparatus. Gap sizes are: the diameter may be 1/10 to 6 inches (approx. 0.25 to 15 cm). Voltages range from a relatively low voltage to several thousand volts, that is, about 500 to 3000 volts. Exemplary substrates may be wire. A chamber is sealed with O-rings and separate chambers are shown in the figure.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a wire substrate, measure voltage and gap parameters, as taught by Penfold et al. in the Chiou et al. system because these are merely apparatus parameters which should be measured in order to obtain consistent results.

The types of materials chosen are a choice in design and substitution of known equivalent structures may be made. In re Kuhl 188 USPQ (CCPA 1975) and In re Ruff 118 USPQ 343 (CCPA 1958).

It has been held that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See In re Casey 152 USPQ 235 (CCPA 1967).

It is well known to one of ordinary skill in the art at the time of the invention that one part of electric discharge is the generation of light. See Hongu et al. USPN 5,777,867 col. 8, lines 55-58. In addition, the very nature of electric discharge generation requires sealing (environmental isolation) at some point in the process.

Claims 4-6, 10-12, 16-17 & 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiou et al., Neff et al. and Penfold et al. as stated in the above paragraph and further in view of Stava (USPN 6,365,864).

Chiou et al. and Penfold et al. do not teach frequency values.

Stava discloses a wire cleaning apparatus in which the wire is within a tunnel and tube assembly. A power supply generates a frequency of 1-3 kHz and 100 to 300 kHz. Plasma is created within the tubing assembly and gas is also used.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a frequency of 1-3 or 100-300 kHz as taught by Stava in the Chiou et al., Neff et al. and Penfold et al. system because these are merely apparatus parameters which should be measured in order to obtain consistent results.

Claims 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiou et al., Neff et al. and Penfold et al. as stated above and further in view of Shiloh et al. (6,245,299).

Chiou et al. and Penfold et al. do not teach a mirror or dimensions.

Shiloh et al. discloses barrier discharge device having a mirror component and cell widths, which are variable, ranging from several cm and down.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a mirror and the dimensions taught by Shiloh et al. in the Chiou et al., Neff et al. and Penfold et al. system because it is merely a variation on the operating parameters.

Claim 2, 9, 14, 18, 20, 23, 36-38, 40-46 & 144 are rejected under 35 U.S.C. 103(a) as being unpatentable over as being unpatentable over Chiou et al., Neff et al. and Penfold et al. as stated in the above paragraph and further in view of Nakamura et al. (USPN 6,489,585).

Chiou et al. and Penfold et al. do not teach a dielectric barrier discharge plasma, the exact gases used or the exact frequency values.

Nakamura et al. discloses the dielectric barrier discharge plasma of a gas, which is used to clean substrates. Gases used in processing may include air, rare gases, argon, neon, krypton and mixtures thereof. Electrode materials, used for plasma generation, may include alkali metals such as Na and K and/or alkaline earth metals Mg and Ca. voltages of 2 kV and frequencies of 100kHz are used.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a dielectric barrier discharge plasma of a gas as taught by Nakamura et al. in the Chiou et al. and Penfold et al. system because it is merely a specific type of cleaning gas.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a frequency and voltage as taught by Nakamura et al. In the Chiou et al., Neff et al. and Penfold et al. system because these are merely apparatus parameters which should be measured in order to obtain consistent results.

Response to Arguments

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See US PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 7:30-4:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu B. Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

June 21, 2009.

/M. Alexandra Elve/
Primary Examiner, Art Unit 3742